

# ***Armored Security Vehicle (ASV)***

***Unclassified Information Briefing***



***LEADER'S TRAINING  
SLIDE PRESENTATION***



## PURPOSE

- **THE FOLLOWING BRIEFING IS AN UNCLASSIFIED INFORMATION BRIEFING ON THE M1117, “GUARDIAN” ARMORED SECURITY VEHICLE (ASV)**





## PURPOSE

- **THE PURPOSE OF THIS BRIEFING IS TO PROVIDE THE LEADERSHIP WITH AN OVERVIEW OF THE PERFORMANCE AND CAPABILITIES OF THE M1117 “GUARDIAN” ARMORED SECURITY VEHICLE (ASV). AT THE CONCLUSION OF THIS INFORMATION BRIEFING, WE WILL DISCUSS HOW BEST TO EMPLOY THE ASV TO MOST ENHANCE OUR OVERALL LETHALITY, SURVIVABILITY AND ABILITY TO ACCOMPLISH OUR MISSION.**

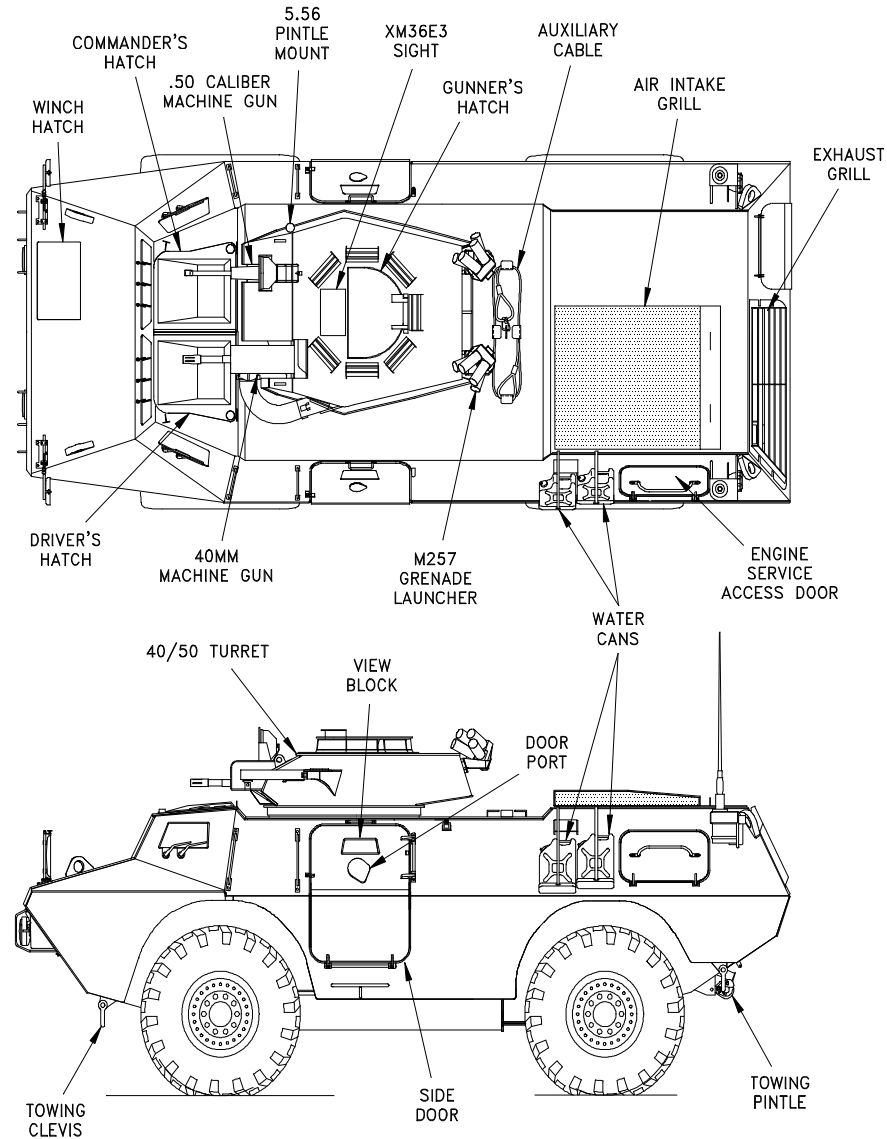


## OUTLINE

- Overview of vehicle performance and capabilities
- M1117 Vs. M1114
- Overall advantages of the ASV
- Overall disadvantages of the ASV
- Functional areas of the ASV
- Lessons learned
- Employment considerations and questions



# BASIC VEHICLE





## PERFORMANCE

- **MAXIMUM SPEED HIGHWAY:** **63 MPH**
- **MAXIMUM SPEED OFF-ROAD:** **48 MPH**
- **MAXIMUM GRADIENT CLIMBABLE:** **60%**
- **MAXIMUM SIDE SLOPE OPERATION:** **30%**
- **TURNING RADIUS:** **55 FEET**
- **FORDING:** **60 INCHES**  
**(HARD BOTTOM)**  
**WITH NO**  
**PREPERATION**



## **BRAKING DISTANCES**

- **20-0 MPH: UNDER 30 FEET**
- **50-0 MPH: UNDER 260 FEET**
- **THESE DISTANCES ARE ON DRY PAVEMENT**
- **ALWAYS ALLOW ENOUGH BRAKING DISTANCE**



## WEIGHT AND DIMENSIONS

- **GROSS VEHICLE WEIGHT (GVW): 29,360 LBS**
- **CURB WEIGHT: 26,000 LBS**
- **PAYLOAD: 3,360 LBS**
- **OVERALL LENGTH: 20 FEET**
- **OVERALL WIDTH: 8.5 FEET**
- **OVERALL HEIGHT (OVER TURRET): 8.5 FEET**
- **C-130 TRANSPORTABLE w/ modification**





## **DRIVE TRAIN**

- **ENGINE:** 260 HP, CUMMINS IN-LINE  
6- CYLINDER,  
TURBOCHARGED  
DIESEL
- **TRANSMISSION:** ALLISON 6-SPEED  
AUTOMATIC
- **TRANSFER CASE:** SINGLE SPEED,  
SHIFT-ON-THE-MOVE
- **DEPENDABLE AND EASY TO MAINTAIN**



## **SUSPENSION**

- **INDEPENDENT FRONT AND REAR**
- **COIL SPRINGS AND SHOCK ABSORBERS AT EACH WHEEL**
- **RUN FLAT INSERTS ON ALL TIRES**
- **CENTRAL TIRE INFLATION SYSTEM (CTIS)**
  - **ADJUST TIRE PRESSURE WITH THE PUSH OF A BUTTON**



## **FUEL SYSTEM**

- **(2) FUEL TANKS WHICH HOLD 25 GALLONS EACH**
- **RANGE OF OVER 400 MILES**
- **RUNS ON JP-8 FUEL**
- **FUEL CROSSOVER VALVE ALLOWS EQUALIZATION OF FUEL TANKS**
- **FUEL SELECTOR VALVE DETERMINES WHICH TANK THE ENGINE DRAWS FROM**



## TURRET SPECIFICATIONS

- **Primary weapon: MK 19 with 96 rounds ready**
- **Secondary weapon: Modified M48 .50 cal M2HB with 200 rounds ready**
- **Externally mounted SAW (not recommended)**
- **M257 smoke grenades (2 banks of each)**
- **M36E3 gunners day/night sight**
- **Power assisted traverse: 360 degree continuous rotation in 8 seconds with manual backup**



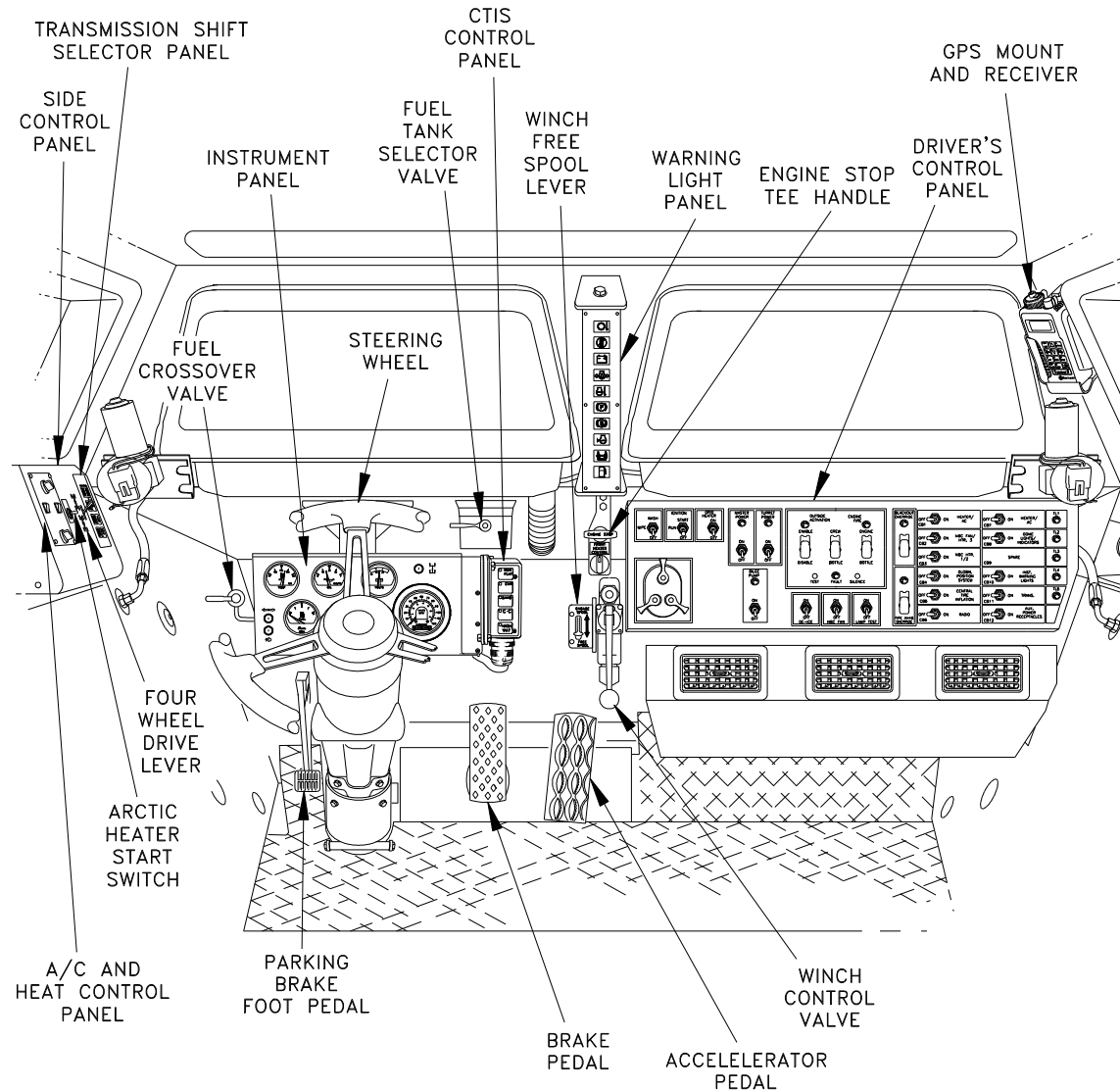
## ACCESSORIES

- **FIRE SUPPRESSION**
  - REMOTE ALARM, FM200 IN THE ENGINE COMPARTMENT
  - (2) PORTABLE DRY CHEMICAL FIRE EXTINGUISHERS IN THE CREW COMPARTMENT
- **HYDRAULIC WINCH**
  - 15,000 LBS LINE PULL
  - 30,000 LBS WHEN USING THE SNATCH BLOCK
- **A/C AND ARCTIC HEATER**
- **46 GPM BILGE PUMP**
- **AIR COMPRESSOR W/ HOSE AND ATTACHMENTS**



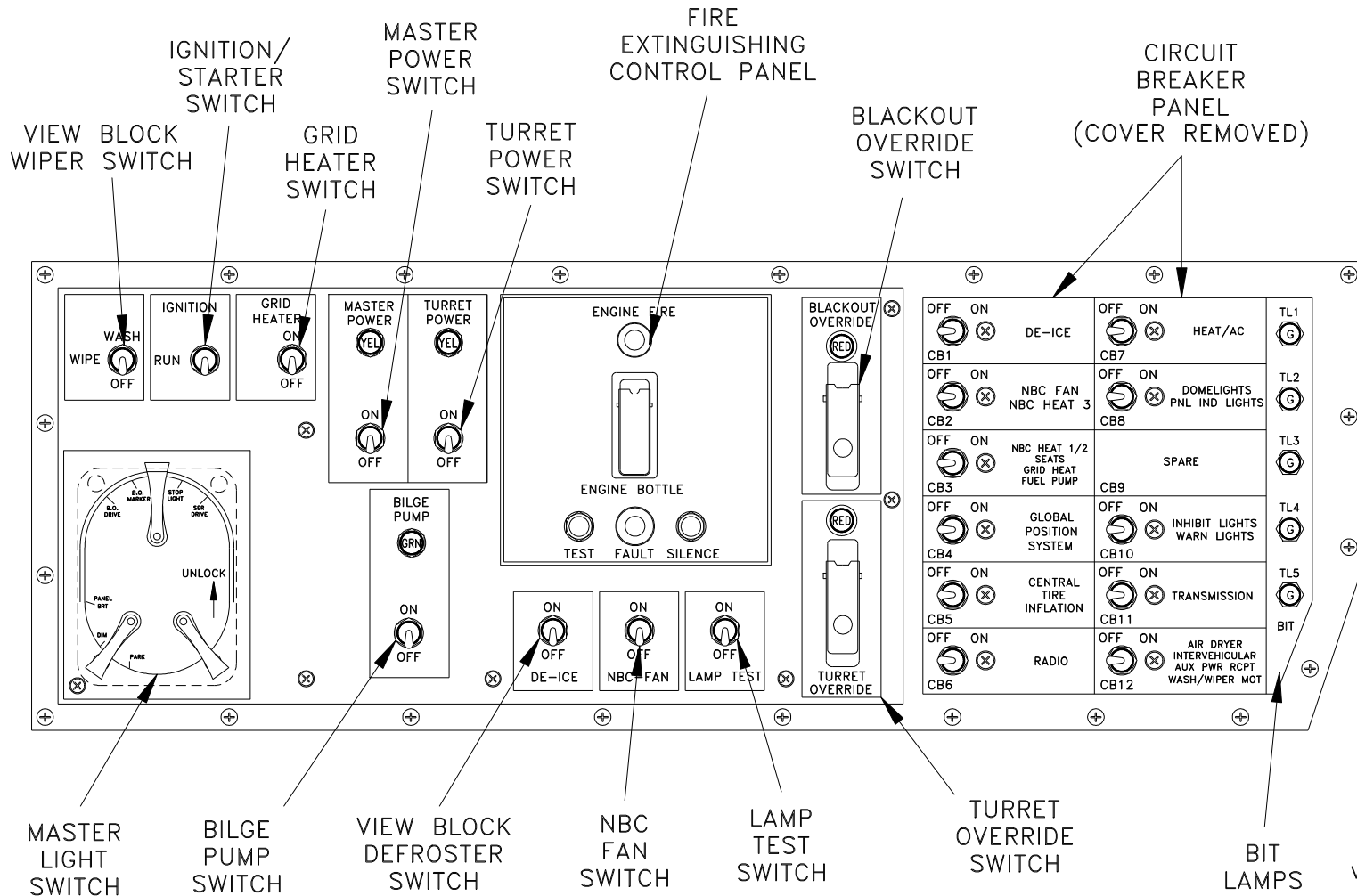


# DRIVER'S AND COMMANDER'S VIEW





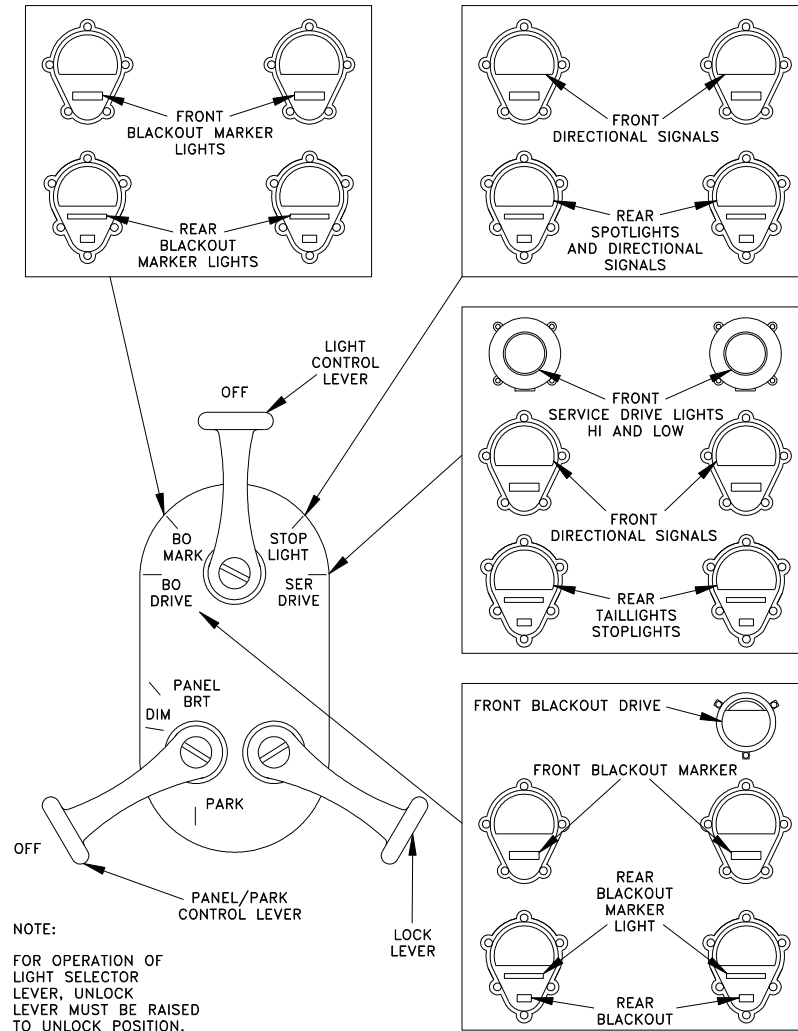
# DRIVER'S CONTROL PANEL





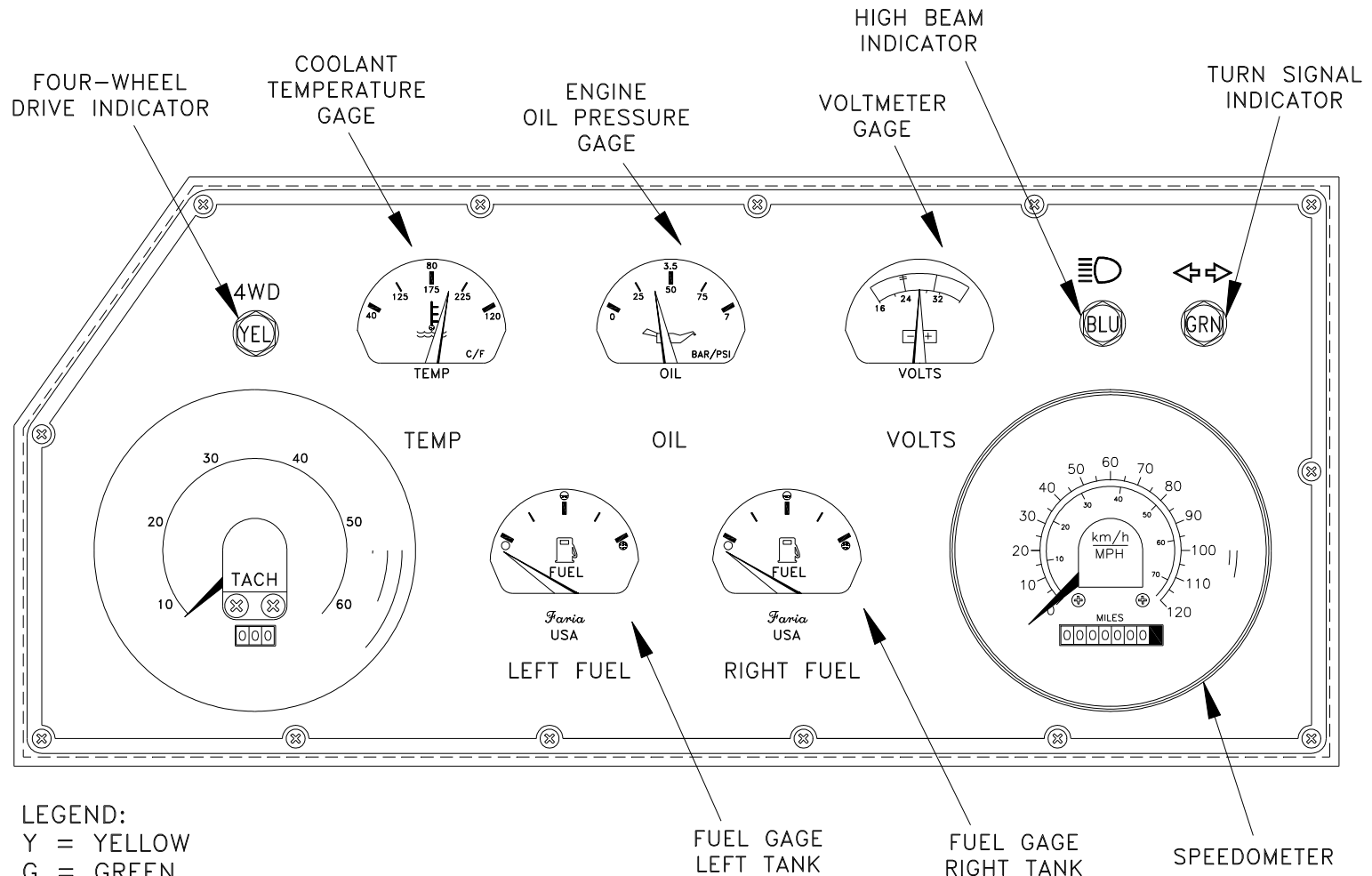
# MASTER LIGHT SWITCH

- PERMITS SELECTION OF VARIOUS LIGHTING COMBINATIONS





# INSTRUMENT PANEL

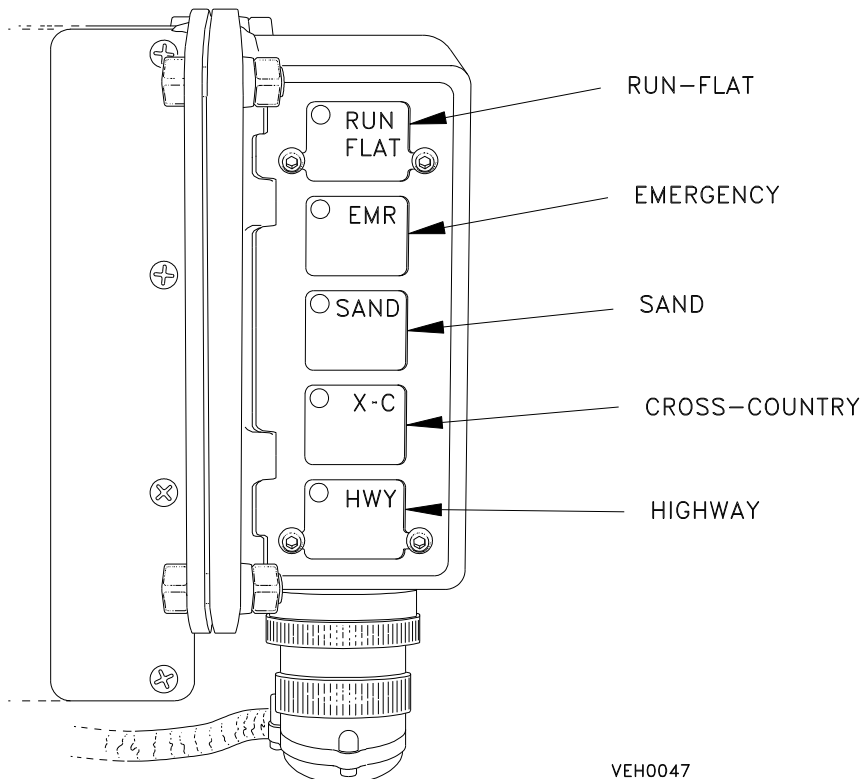




# CENTRAL TIRE INFLATION SYSTEM PANEL (CTIS)

- **LOCATED ON RIGHT SIDE OF INSTRUMENT PANEL**
- **ADJUSTS VEHICLE TIRE PRESSURE DURING OPERATIONS**
- **PANEL LIGHTS INDICATE SELECTED MODE**
- **PROVIDES DIAGNOSTIC WARNINGS**

## WARNING SIGNALS



VEH0047

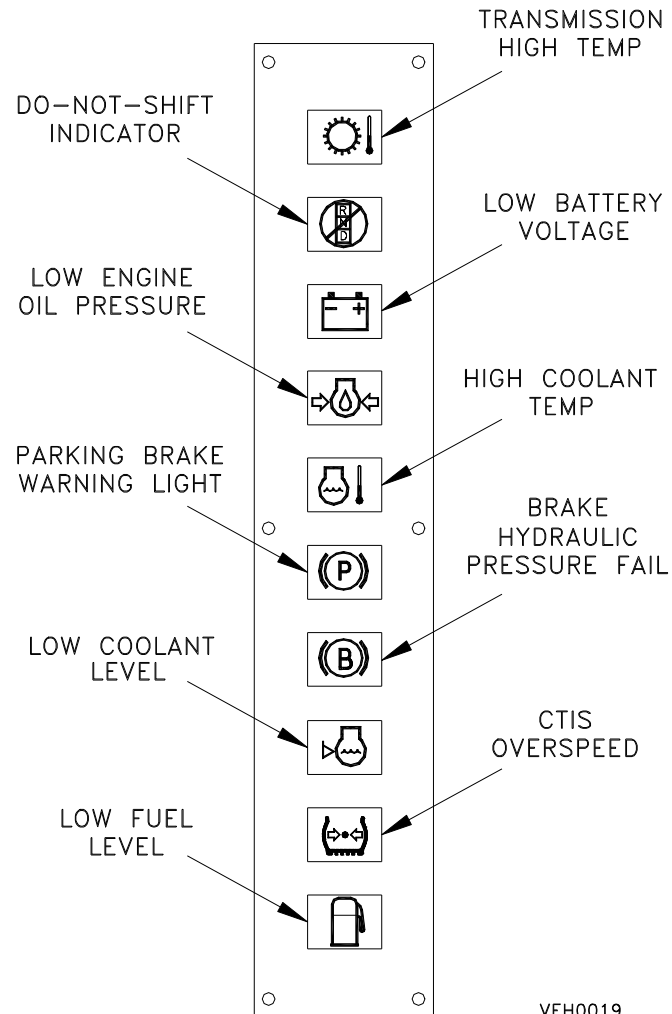
- **5 FLASHING LIGHTS**
  - **PROBLEM WITH CRITICAL (CTIS) COMPONENT. REPORT PROBLEM TO MAINTENANCE**
- **4 LIGHTS:**
  - **ONE TIRE IS LOW, CHECK TIRES FOR DAMAGE, PUSH RUN FLAT IF DAMAGE IS MINOR**
- **2 LIGHTS:**
  - **PRESSURE ADJUSTMENT NOT COMPLETE, PUSH DESIRED SETTING TO RE-ACTIVATE SYSTEM**
- **NO LIGHTS:**
  - **SYSTEM DETECTS LOW VOLTAGE, CHECK CIRCUIT BREAKER. REPORT PROBLEM TO MAINTENANCE**





# WARNING LIGHT PANEL

## • WARNING LIGHTS ARE TO PREVENT SERIOUS DAMAGE TO VEHICLE



















VEH0019

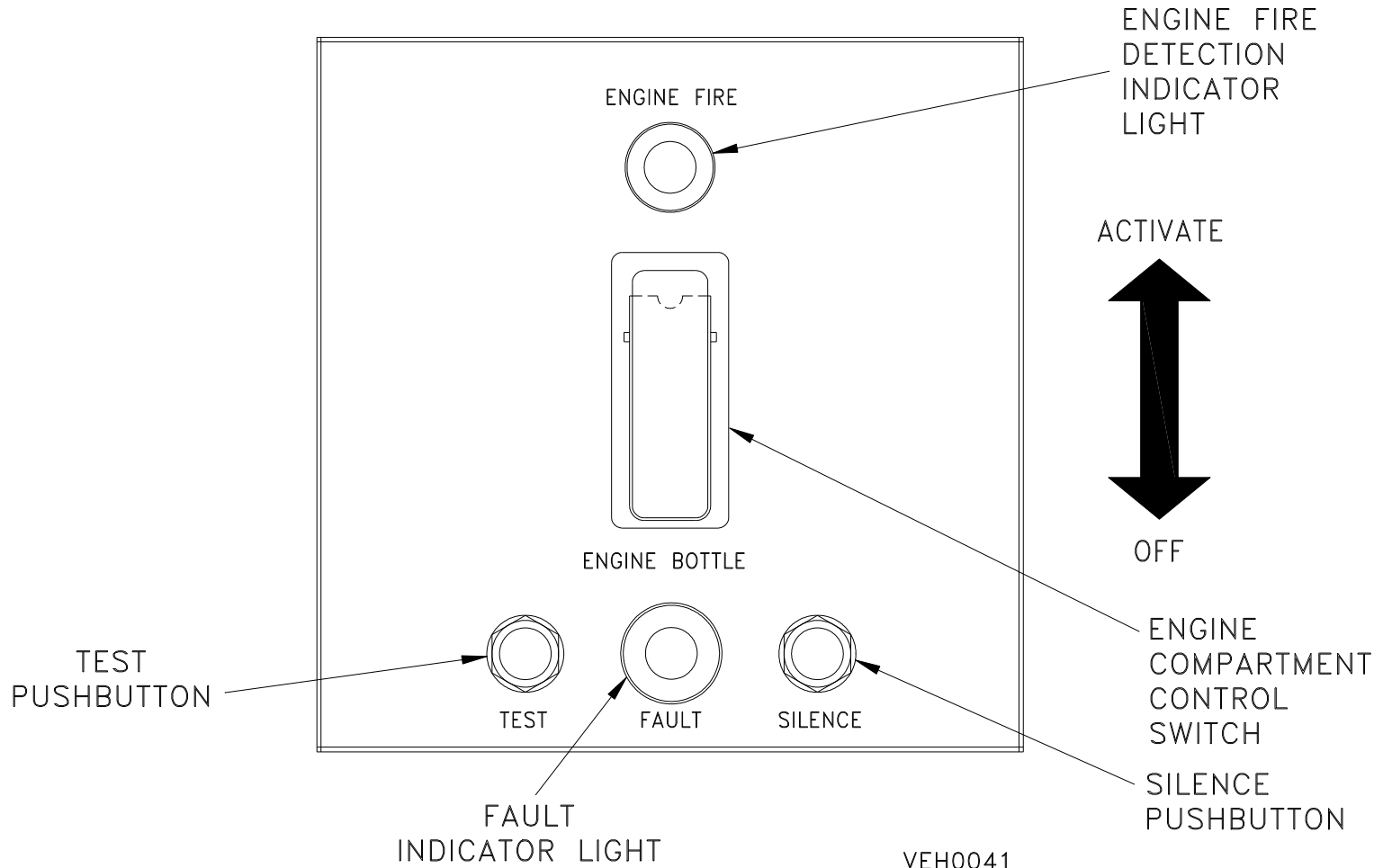


# CIRCUIT BREAKER SWITCHES

- **LOCATED ON DRIVER'S CONTROL PANEL**
- **CONTROLS ELECTRICAL SYSTEM COMPONENTS**
- **PROVIDES BUILT-IN-TEST (BIT) FOR FAULT ISOLATION**

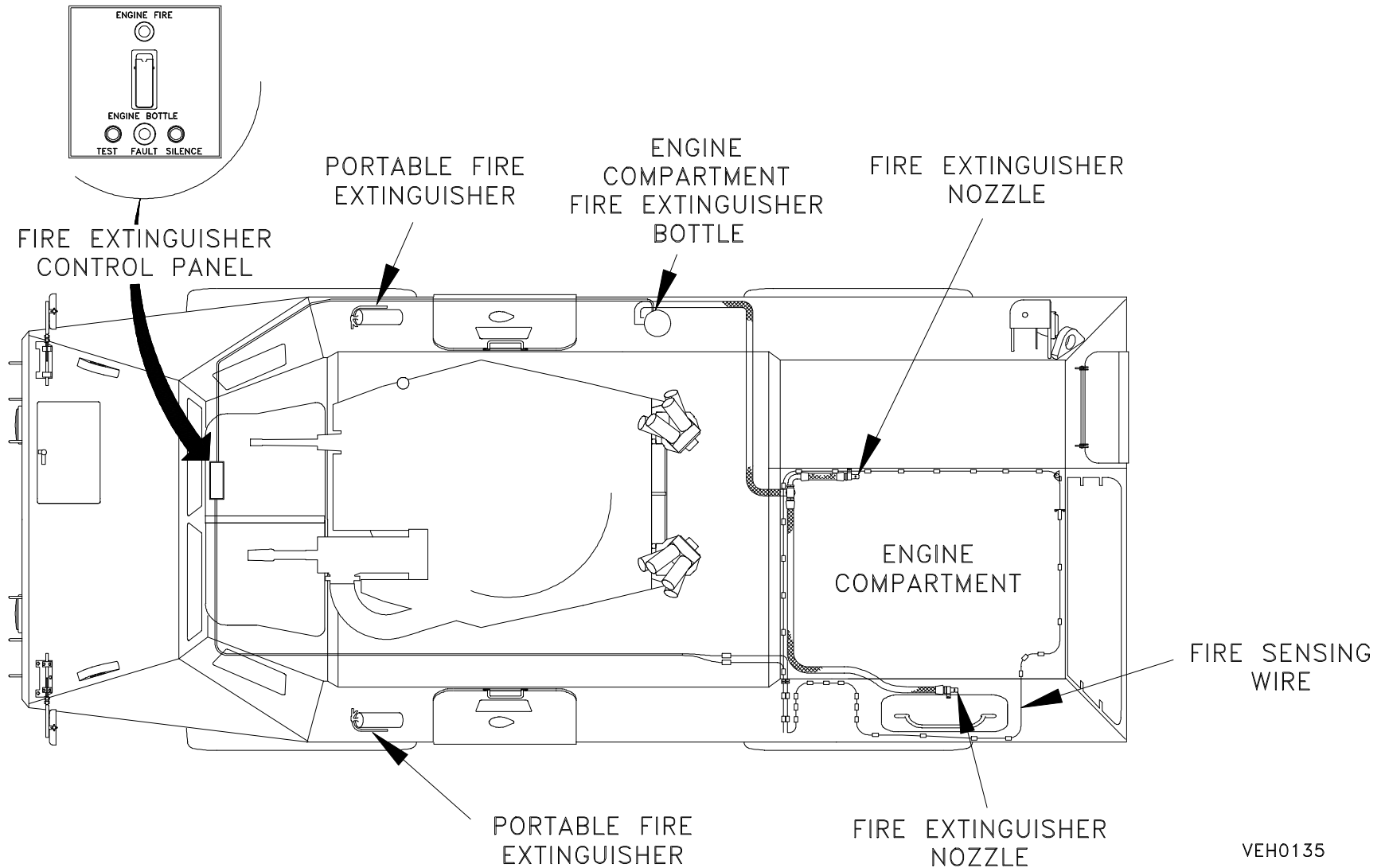
OFF      ON  CB1      DE-ICE	OFF      ON  CB7      HEAT/AC	TL1 
OFF      ON  CB2      NBC FAN NBC HEAT 3	OFF      ON  CB8      DOMELIGHTS PNL IND LIGHTS	TL2 
OFF      ON  CB3      NBC HEAT 1/2 SEATS GRID HEAT FUEL PUMP	 CB9      SPARE	TL3 
OFF      ON  CB4      GLOBAL POSITION SYSTEM	OFF      ON  CB10      INHIBIT LIGHTS WARN LIGHTS	TL4 
OFF      ON  CB5      CENTRAL TIRE INFLATION	OFF      ON  CB11      TRANSMISSION	TL5 
OFF      ON  CB6      RADIO	OFF      ON  CB12      AIR DRYER INTERVEHICULAR AUX PWR RCPT WASH/WIPER MOT	BIT

# FIRE EXTINGUISHING CONTROLS



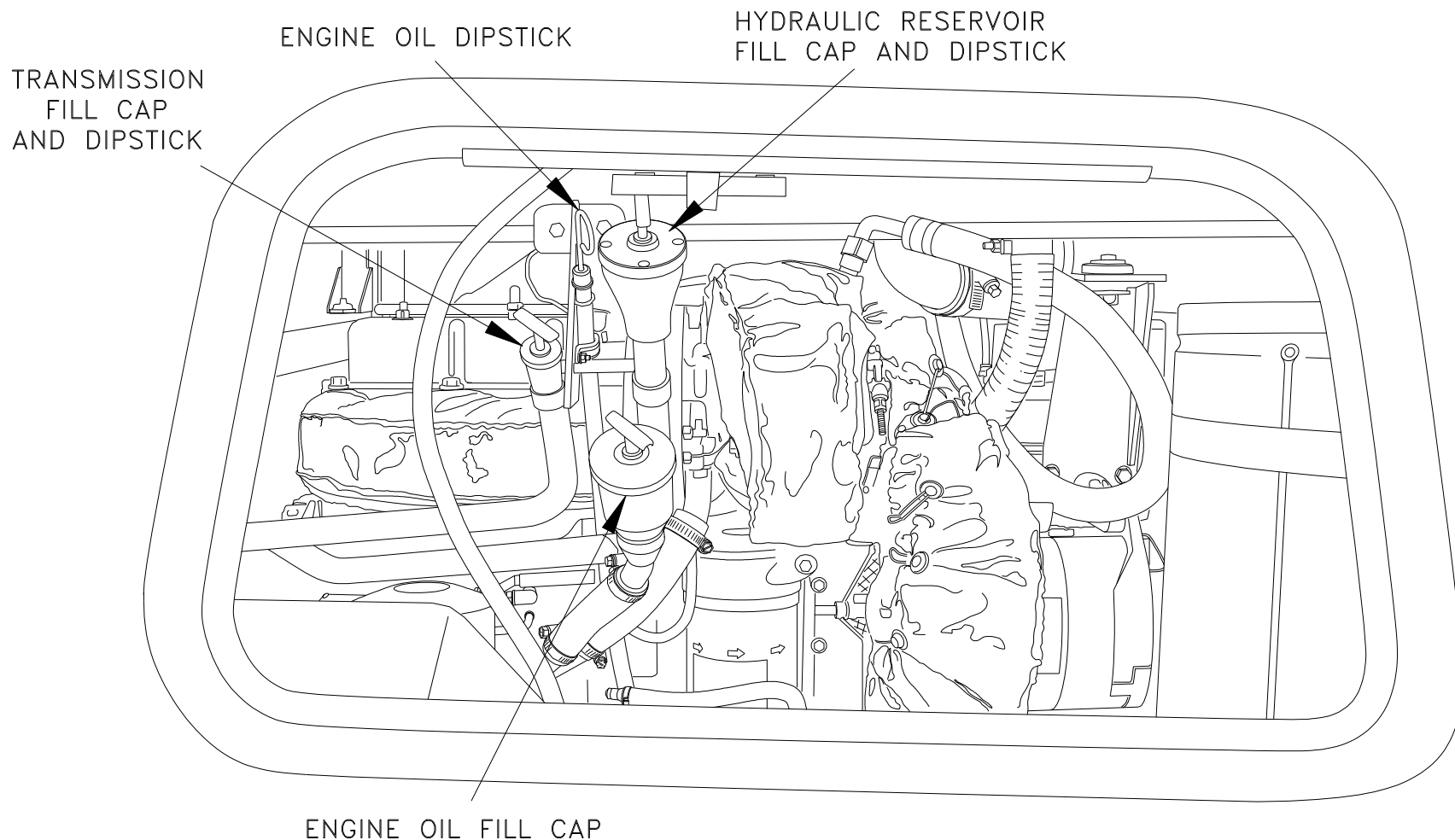


# FIRE SUPPRESSION SYSTEM





# DIPSTICKS AND FILL TUBES



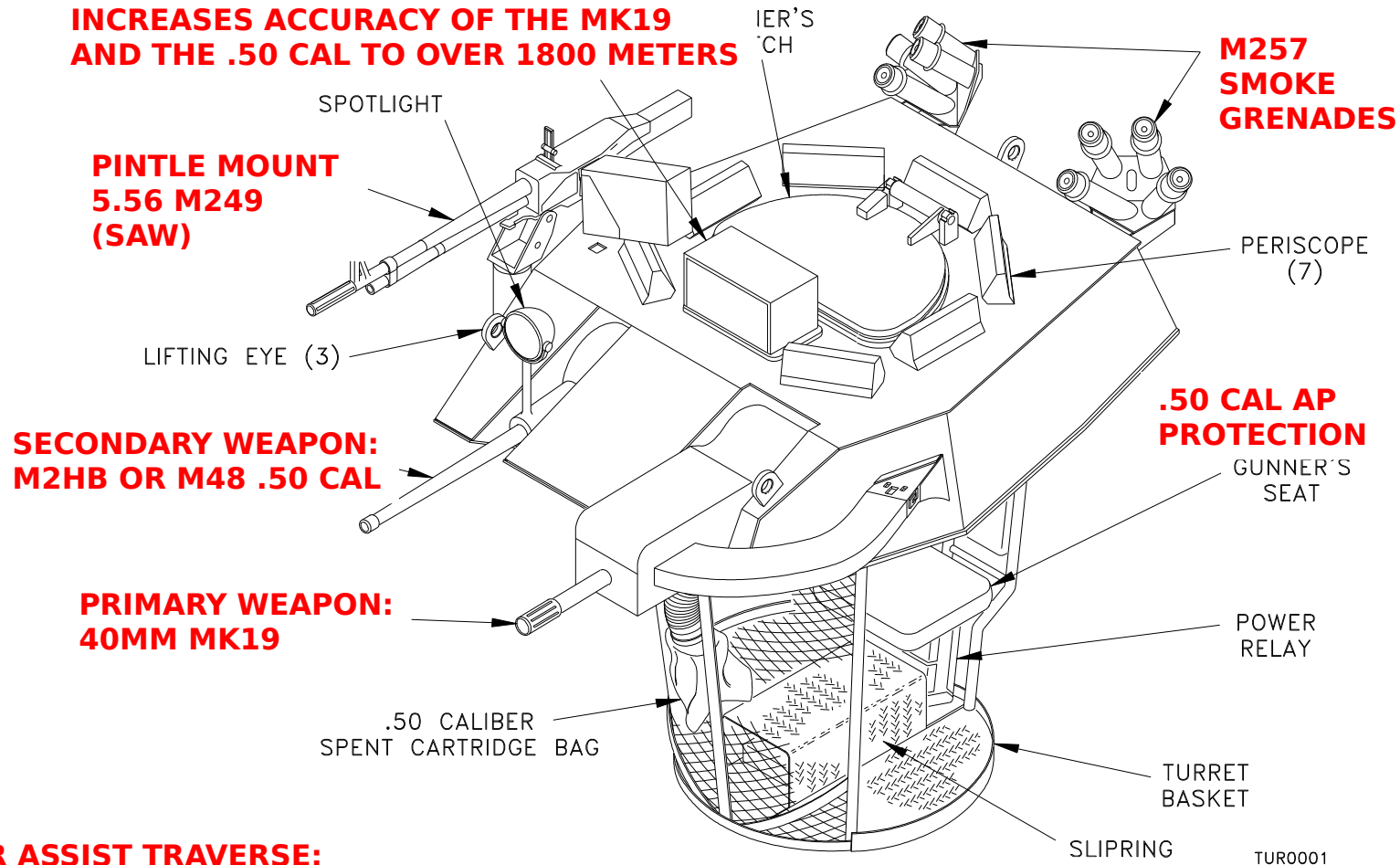
VEH0088





# 40/50 TURRET

**M36E3 GUNNER'S DAY/NIGHT SIGHT:  
INCREASES ACCURACY OF THE MK19  
AND THE .50 CAL TO OVER 1800 METERS**



## **POWER ASSIST TRAVERSE:**

- 360 DEGREE CONTINUOUS ROTATION
- 45 DEG/SEC = 1 REVOLUTION IN 8 SECONDS
- MANUAL BACK-UP

## **MANUAL ELEVATION:**

- 45 DEGREE MAX ELEVATION
- -8 DEGREE MAX DEPRESSION

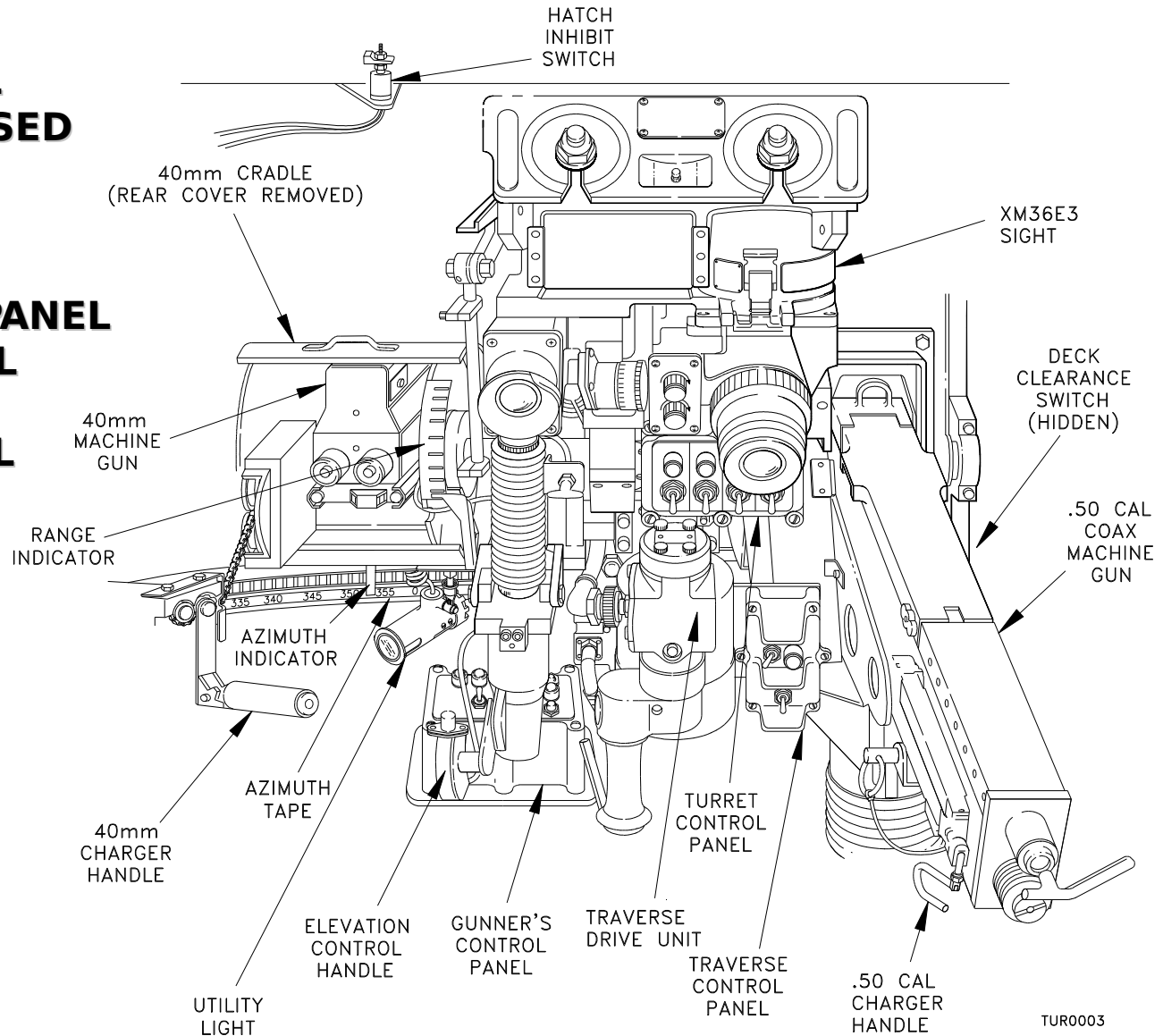


# 40/50 GUNNER'S STATION

- **THE (3) ELECTRICAL CONTROL PANELS USED TO OPERATE THE TURRET:**

- 1) **TURRET CONTROL PANEL**
- 2) **GUNNER'S CONTROL PANEL**
- 3) **TRAVERSE CONTROL PANEL**

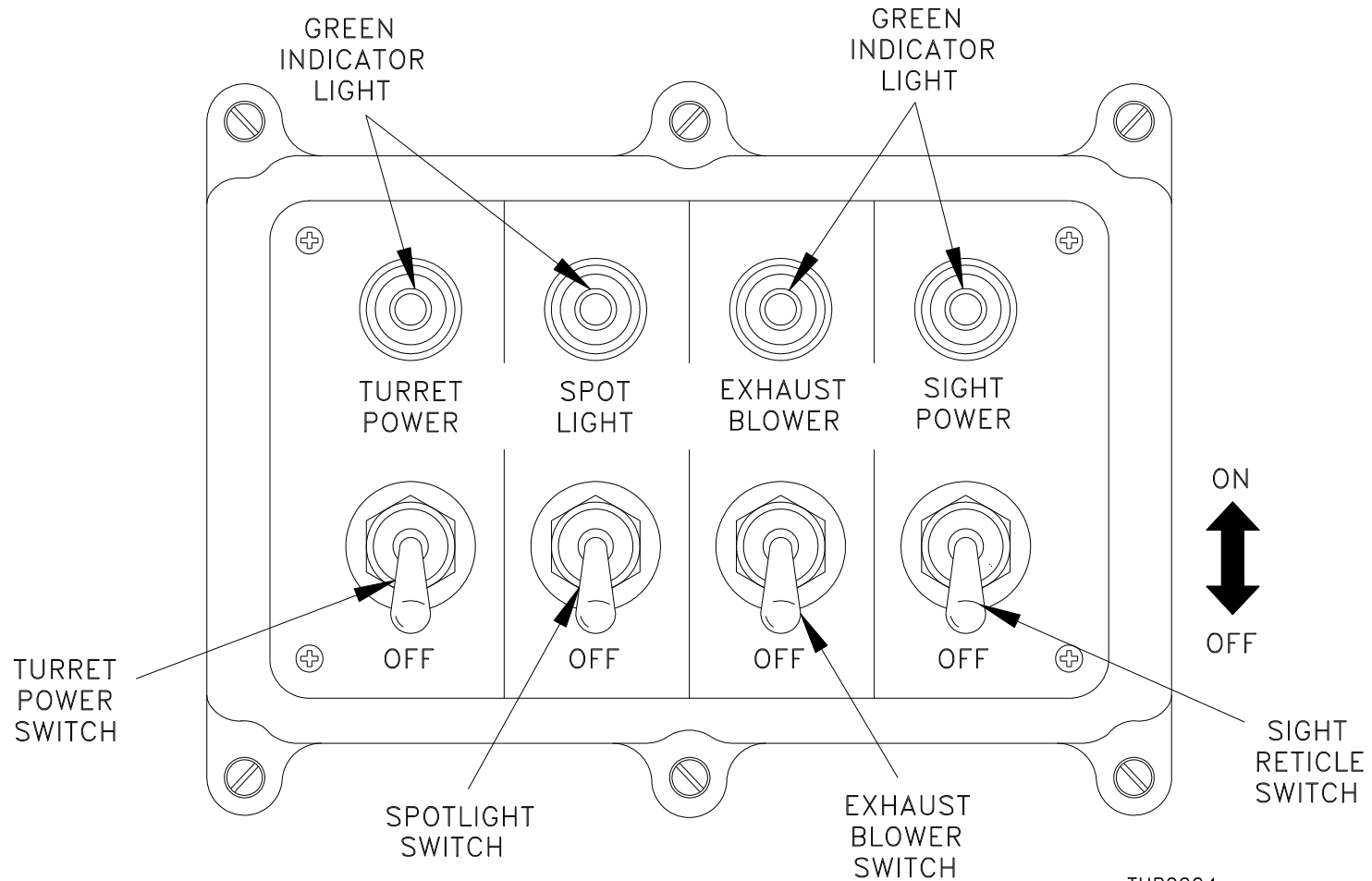
- **NOTE THE LOCATION OF EACH PANEL**





# TURRET CONTROL PANEL

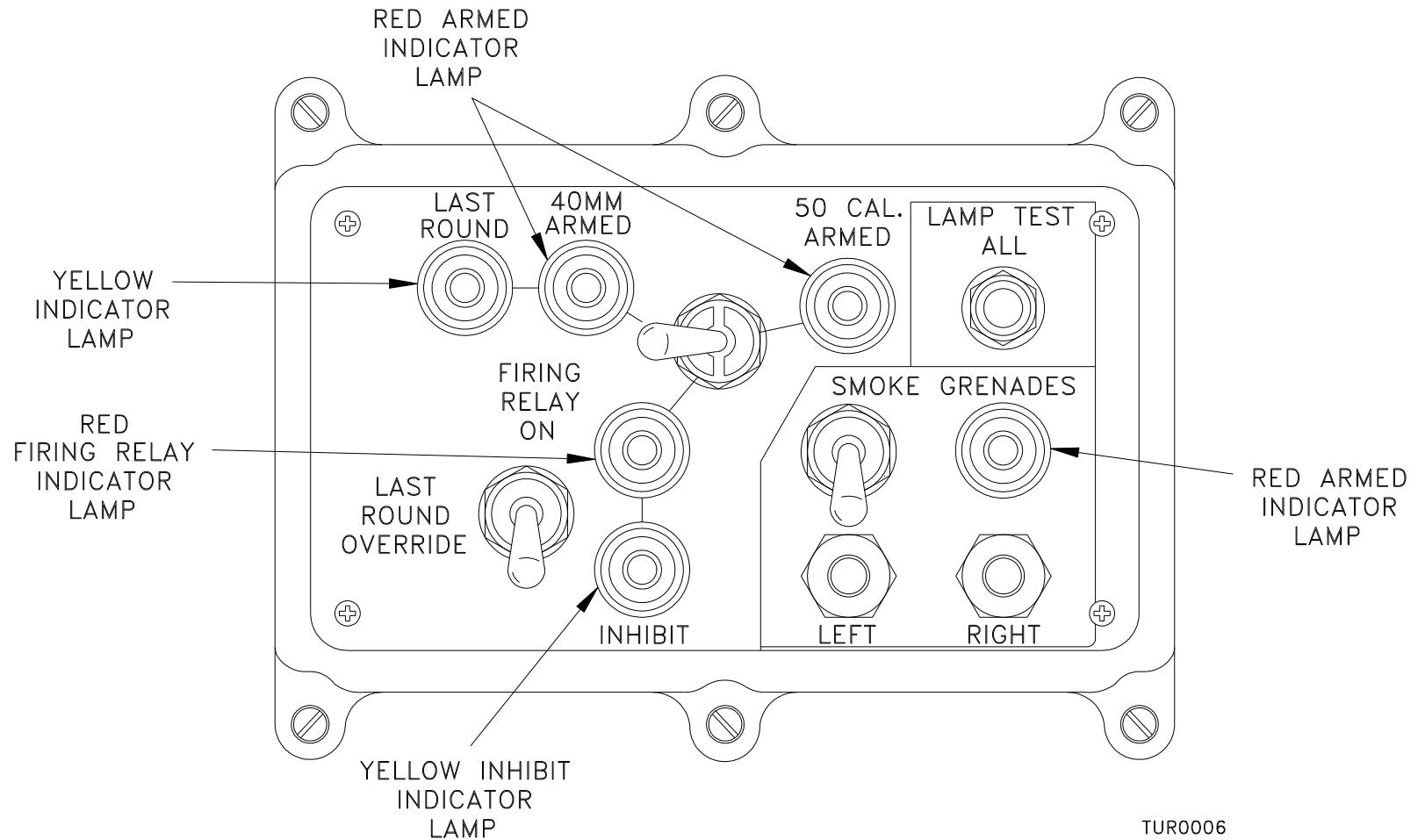
- **CONTROLS MAIN ELECTRICAL POWER TO THE TURRET**



TUR0004



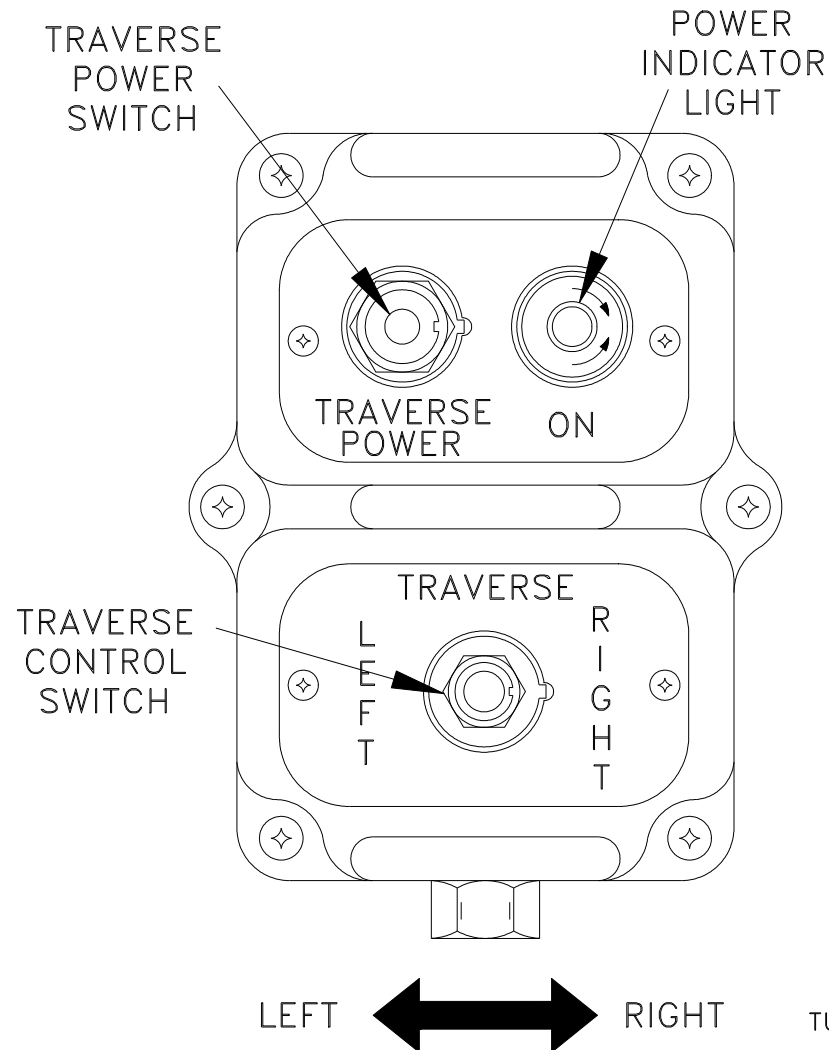
# GUNNER'S CONTROL PANEL



TUR0006



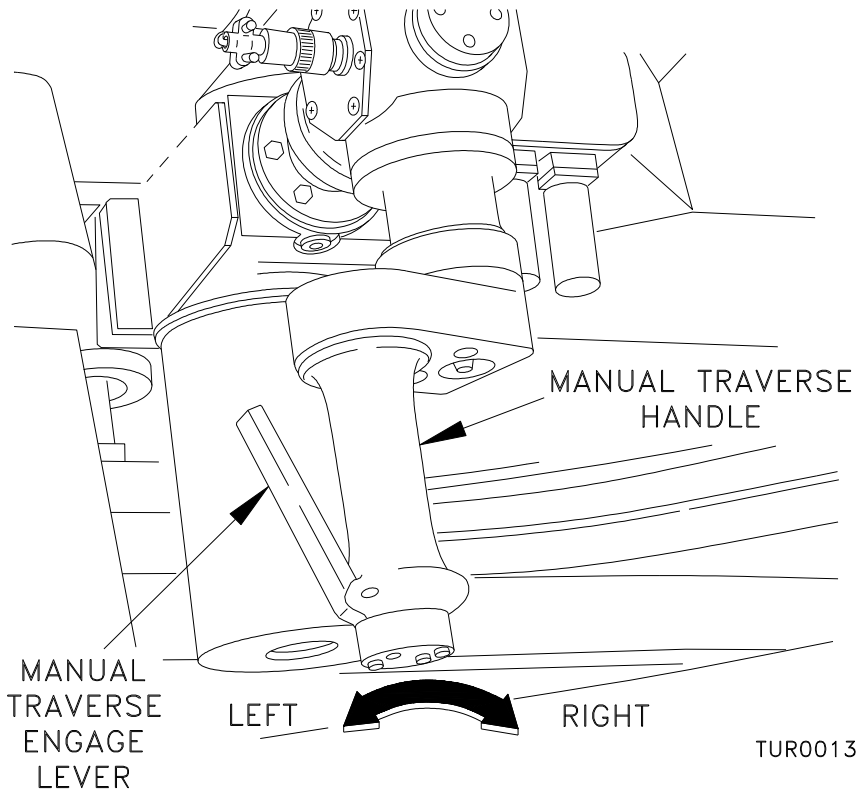
# TRAVERSE CONTROL PANEL



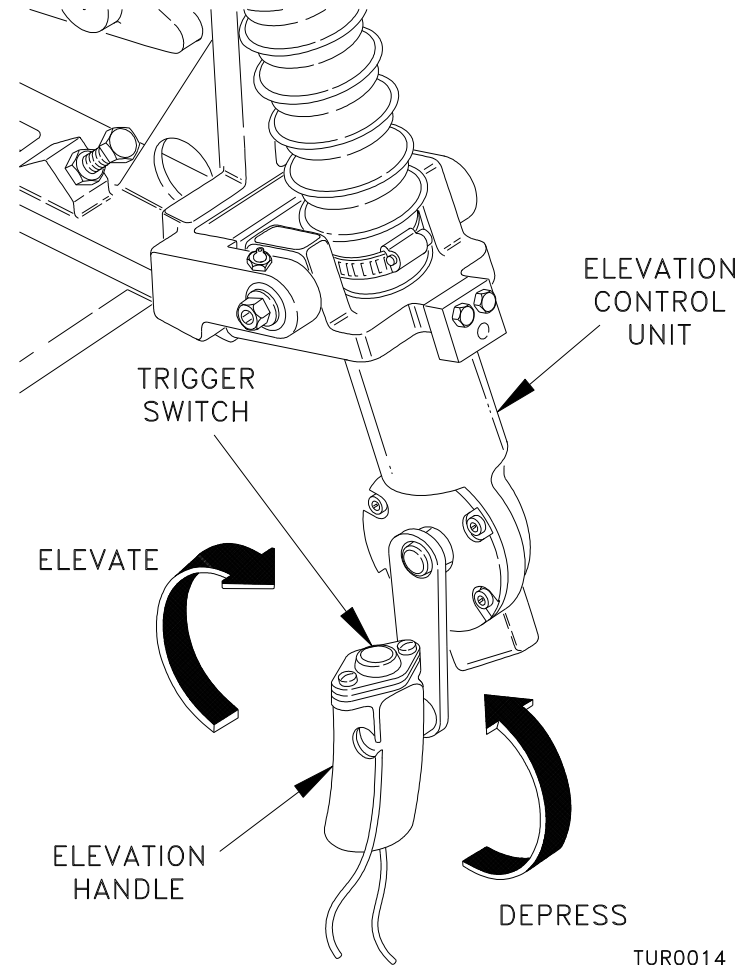




# MANUAL CONTROLS



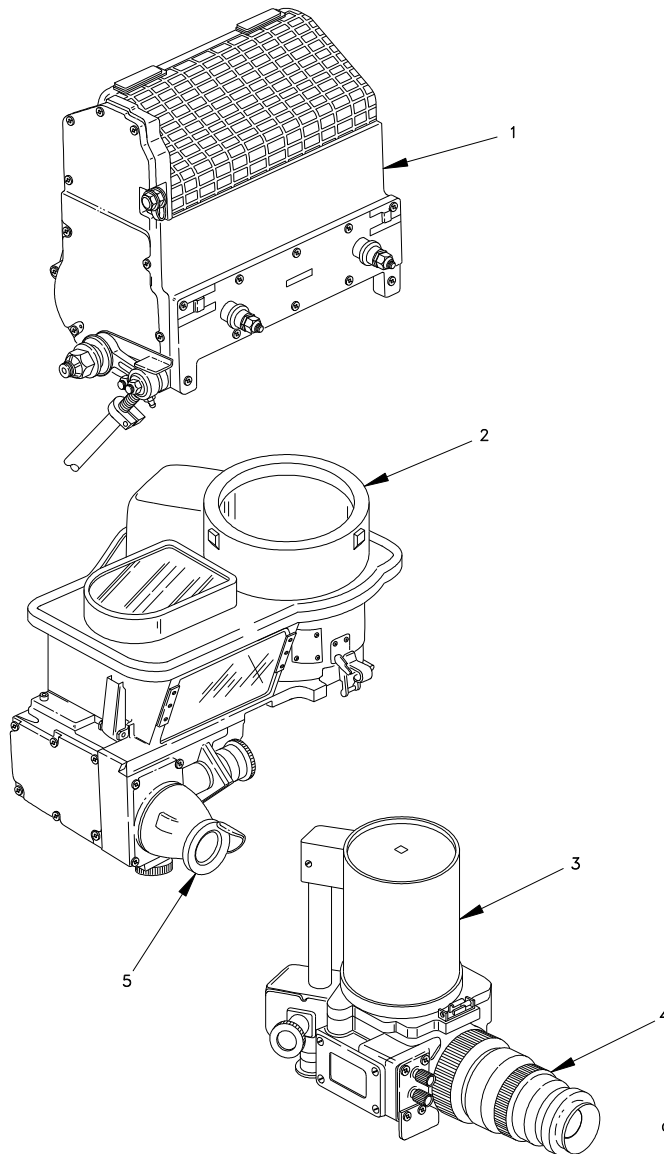
## TRAVERSE



## ELEVATION



# M36E3 SIGHT ASSEMBLY



## COMPONENTS

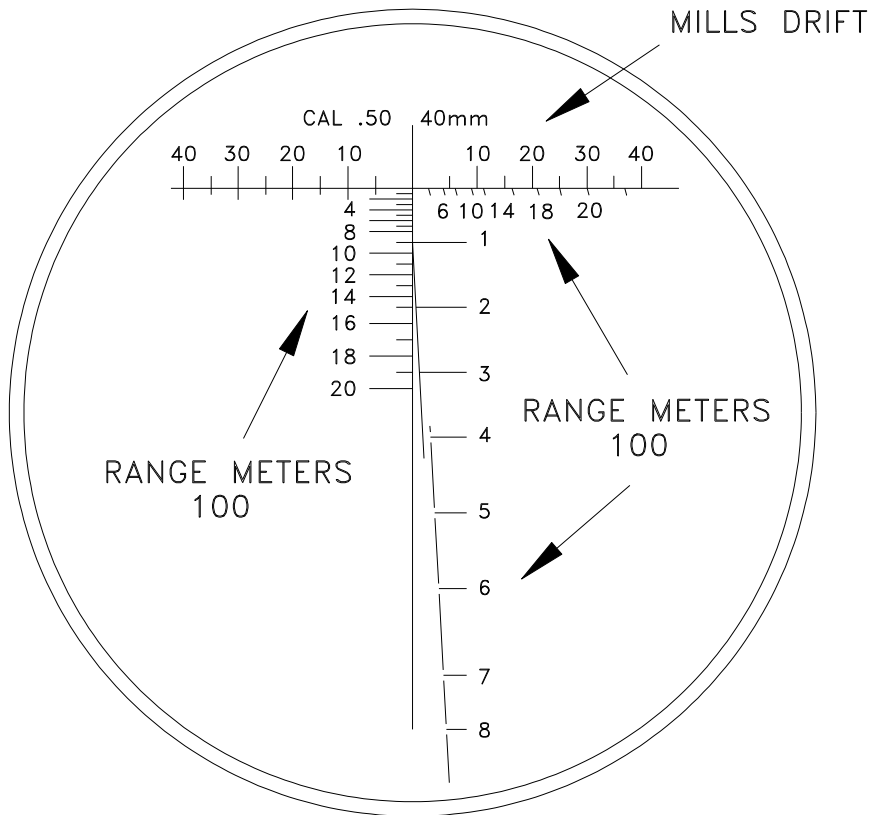
**1. HEAD ASSEMBLY**

**2. DAY BODY**

**3. NIGHT VISION  
ELBOW**

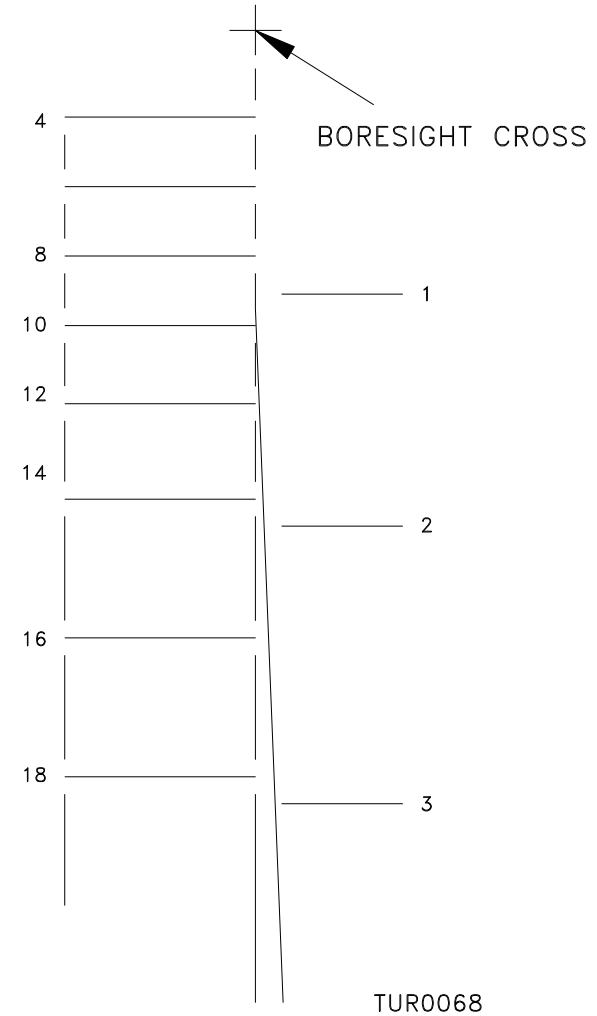


# SIGHT RETICLE'S



TUR0033

**DAY**

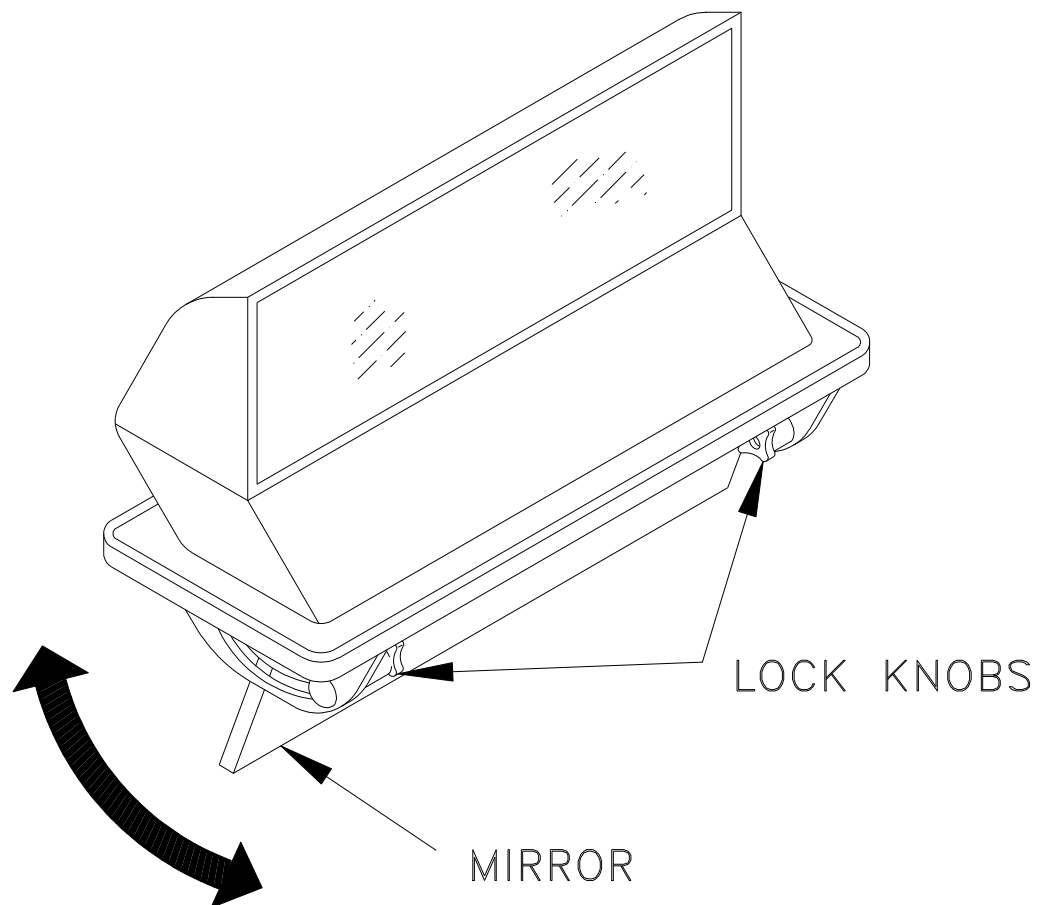


TUR0068

**NIGHT**



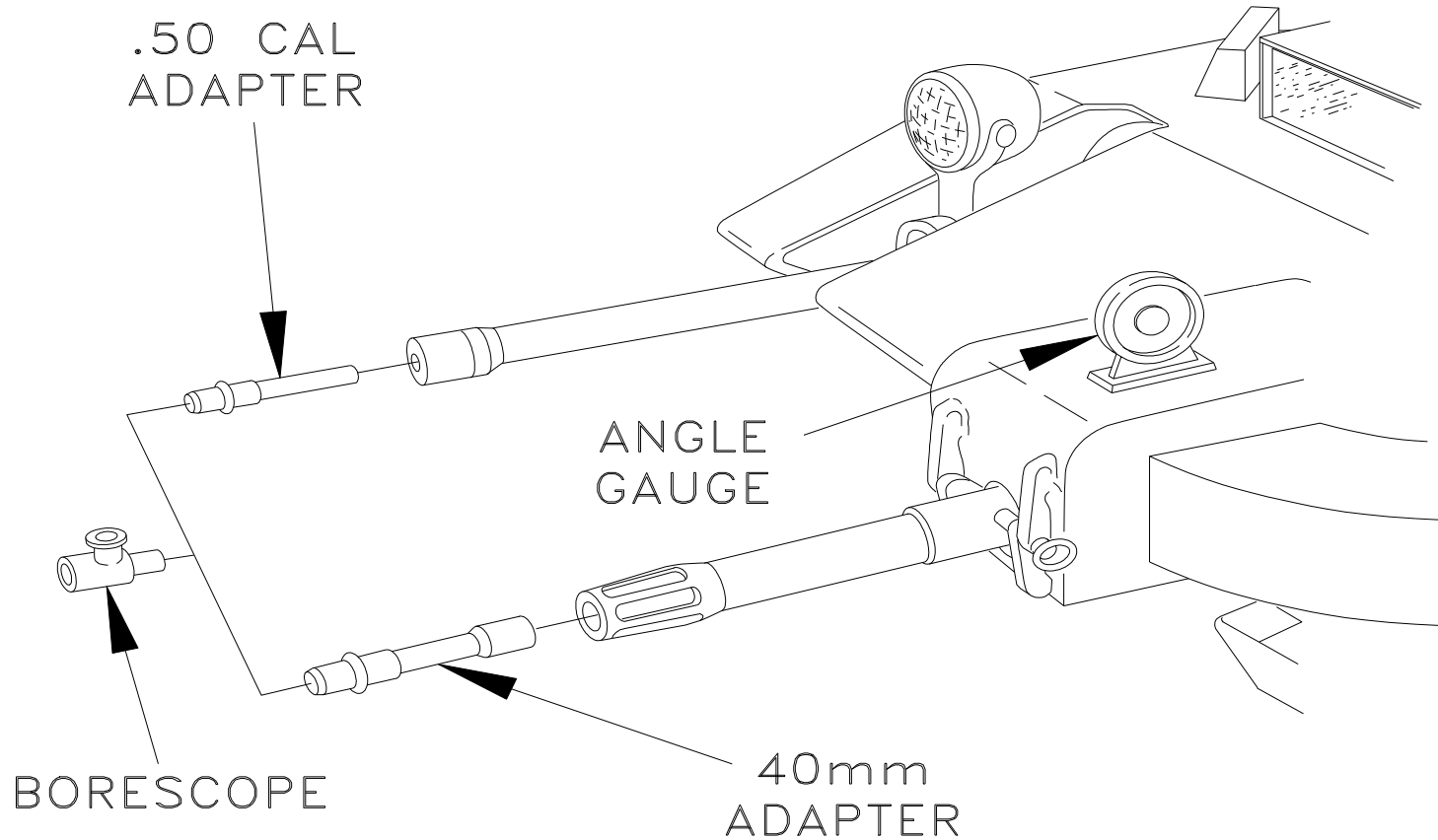
# PERISCOPE ADJUSTMENT



TUR0019

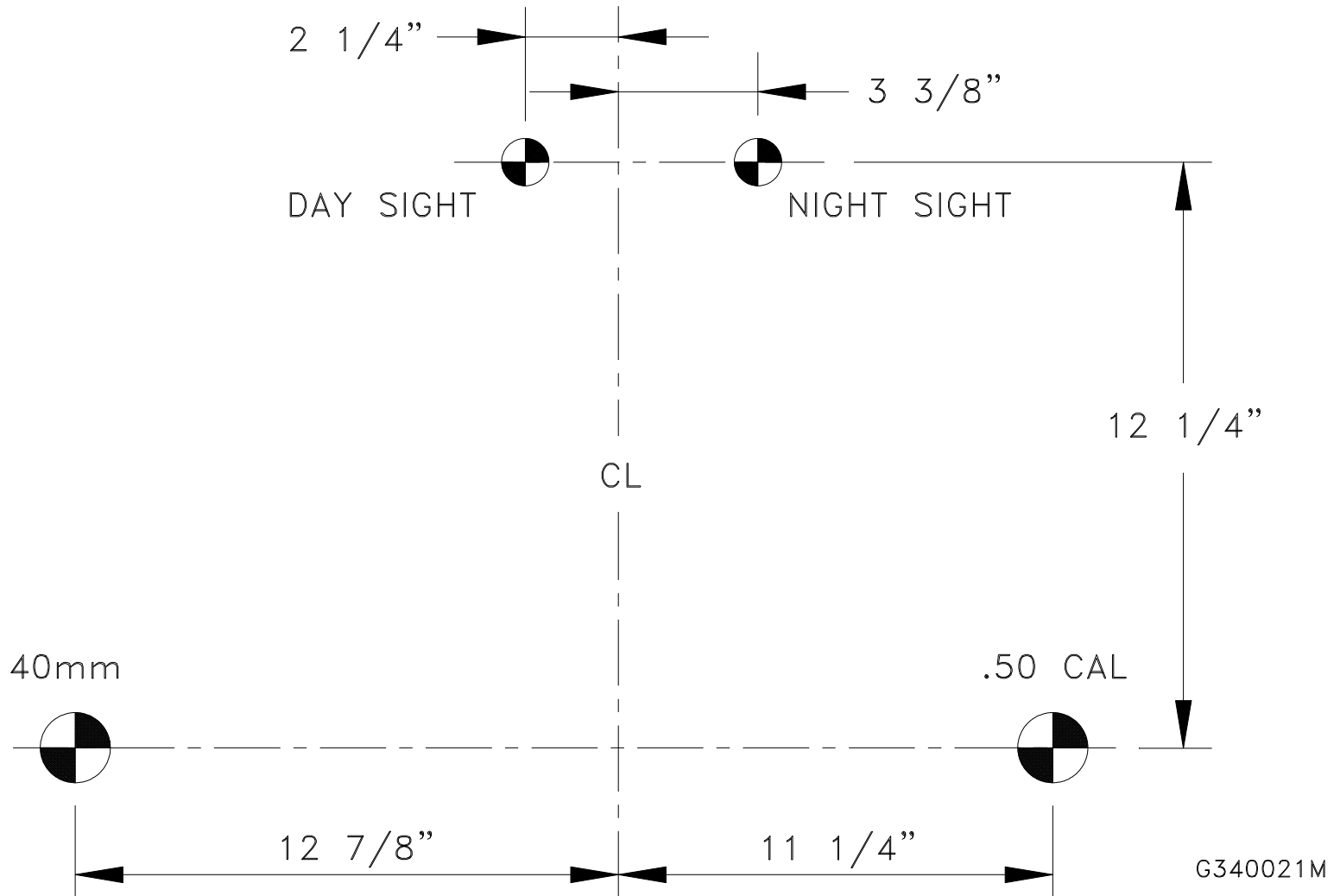


# BORESIGHT ADAPTERS AND BORESCOPE

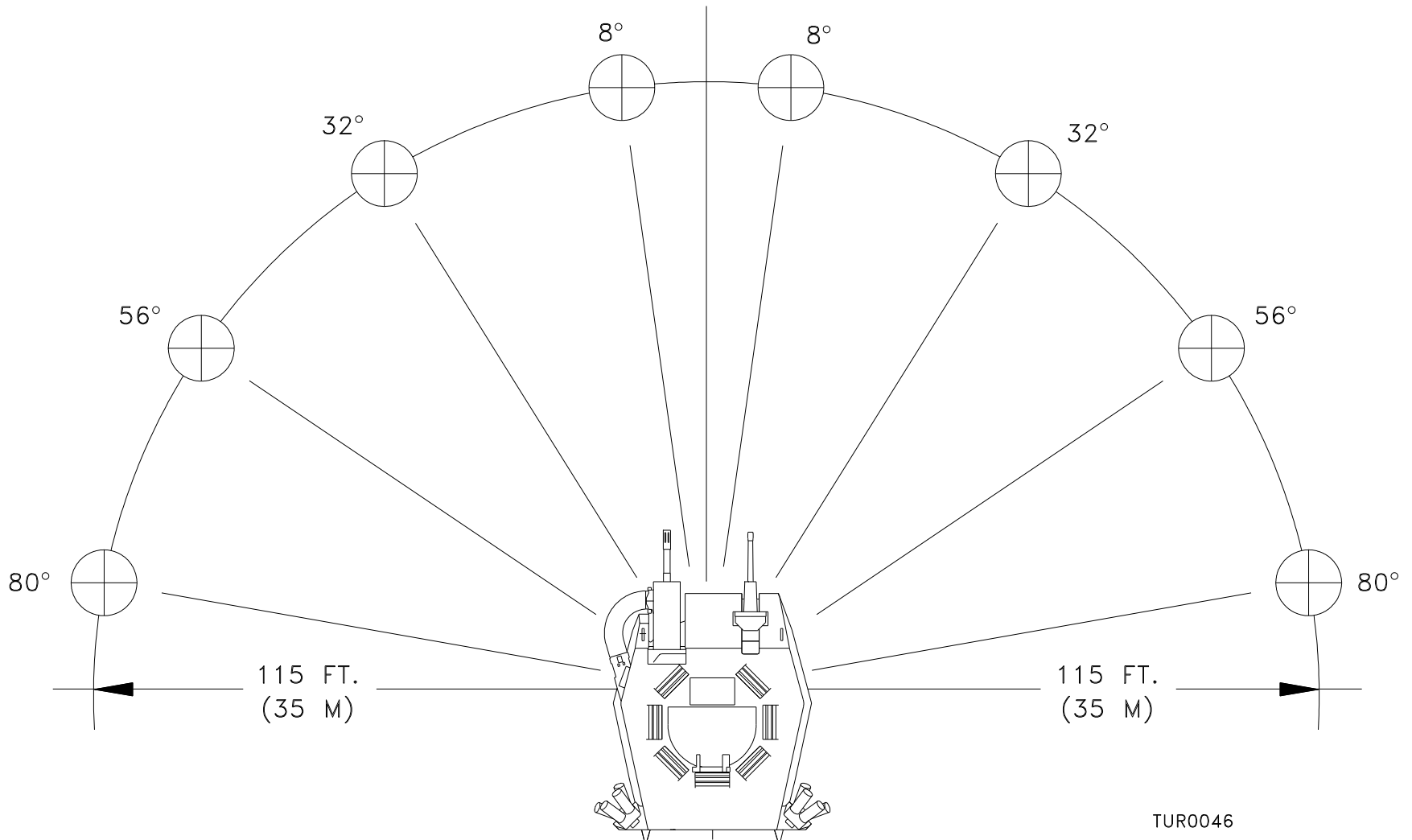


G340020M

# PARALLAX BORESIGHT TARGET

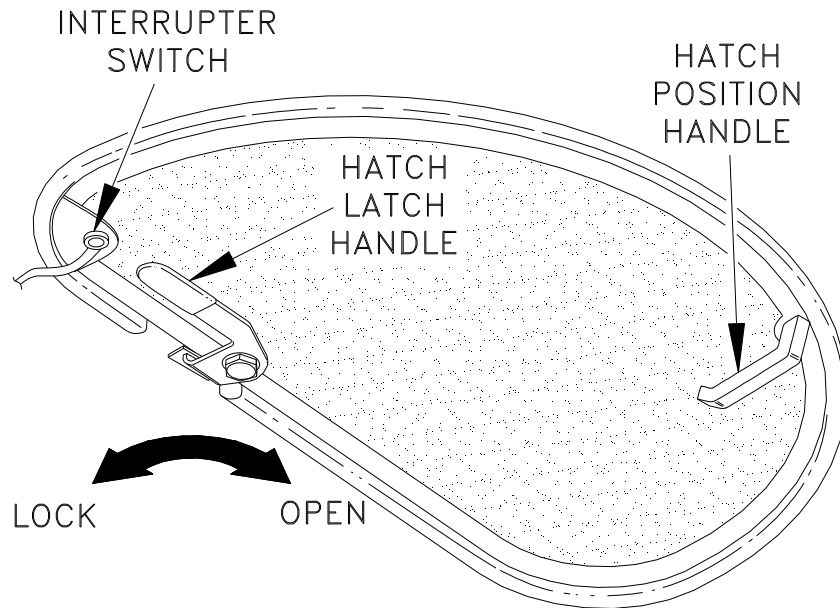


# GRENADE LAUNCHER BURST PATTERN



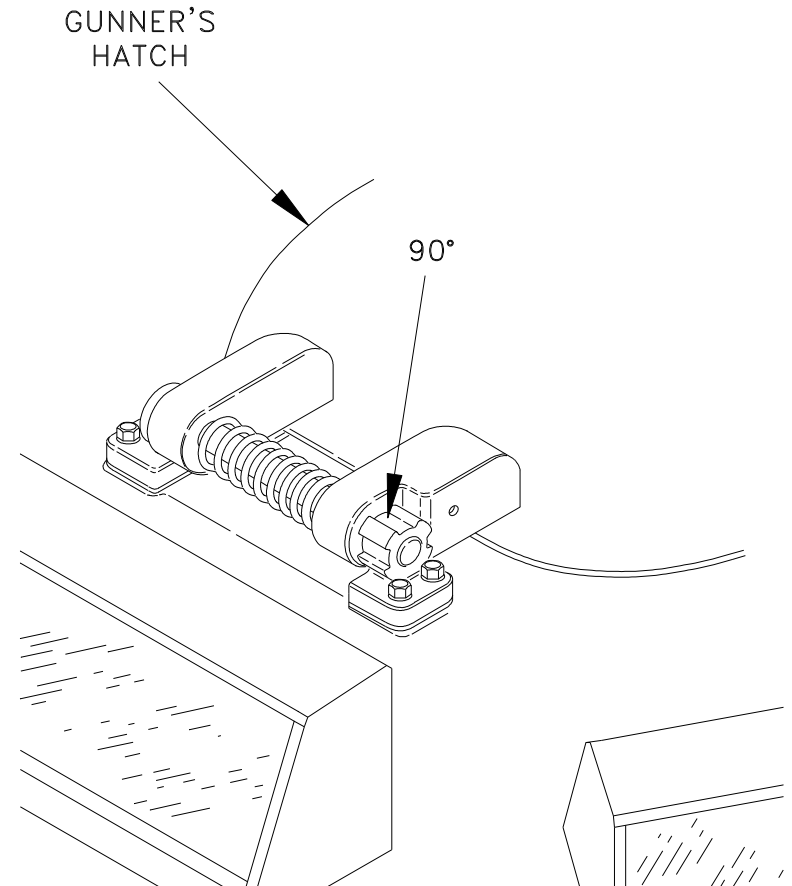


# GUNNER'S HATCH



TUR0016

## OPERATION



TUR0017

## DETENT STOPS





## **MAINTENANCE INSTRUCTIONS**

- **KEEP PERMANENT RECORD OF SERVICES, REPAIRS AND MODIFICATIONS FOR EACH VEHICLE**
- **REFER TO (DA PAM 738-750) FOR A LIST OF FORMS AND RECORDS REQUIRED**
- **CREW COMMANDER SHOULD ENSURE THAT ALL RECORDS ARE ACCURATELY KEPT**
- **CREW COMMANDER SHOULD ENSURE THAT SCHEDULED MAINTENANCE IS PERFORMED ON THE VEHICLE AS PRESCRIBED IN THE OPERATOR'S MANUAL CHAPTER 3**



# UNUSUAL OPERATING CONDITIONS

- **LUBRICATE MORE FREQUENTLY:**
  - **EXTREME TEMPERATURES**
  - **PROLONG PERIODS OF HIGH-SPEED OPERATIONS**
  - **CONTINUOUS OPERATIONS IN SAND, DUST OR MUD**
  
- **AFTER FORDING OPERATIONS:**
  - **RUN ENGINE TO PURGE ANY WATER FROM SYSTEM**
  - **INSPECT FOR STANDING WATER IN BILGE**
  - **GET VEHICLE TO MAINTENANCE ASAP FOR LUBE AND FLUID CHECKS**



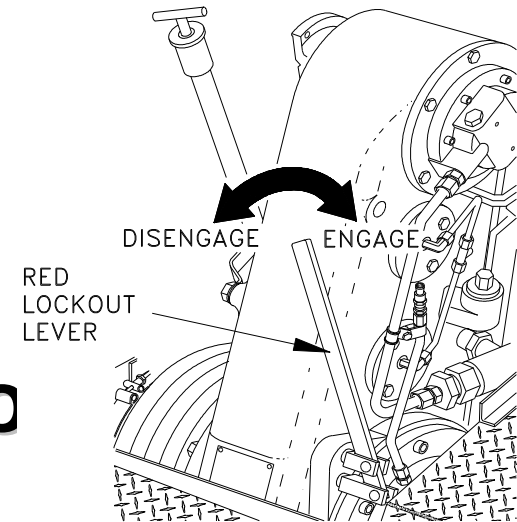
## TOWING THE ASV

- **CONNECT VEHICLES USING A SUITABLE TOW BAR**
- **DO NOT USE CABLES OR CHAINS TO TOW THE ASV UNLESS NECESSARY**
- **ATTACH SAFETY CHAINS BETWEEN VEHICLES THAT WILL HOLD IF THE TOW BAR BREAKS OR BECOMES UNATTACHED**

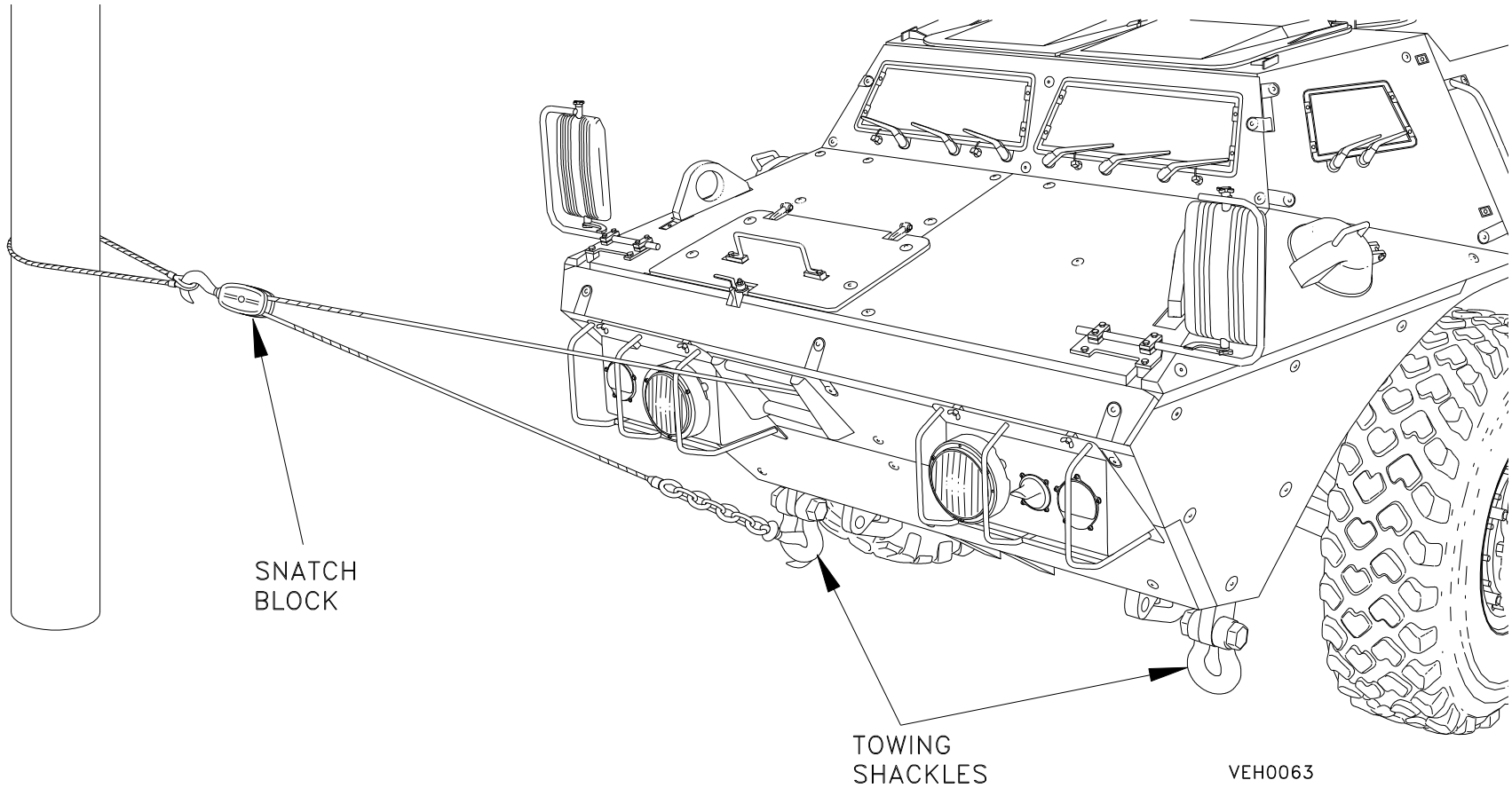


## TRANSFER CASE LOCKOUT LEVER

- **PARKING BRAKE WILL NOT HOLD WHEN T-CASE LOCKOUT LEVER IS DISENGAGED**
- **ATTACH VEHICLES WITH TOW BAR OR CHOCK VEHICLE BEFORE DISENGAGING T-CASE, VEHICLE WILL TRY TO ROLL**
- **DISENGAGE T-CASE LOCKOUT LEVER**
- **VEHICLE IS NOW READY TO TO**
- **ENGAGE LOCKOUT LEVER AFTER TOWING VEHICLE**



# WINCHING WITH SNATCH BLOCK





## LESSONS LEARNED

- Take particular care when loading the MK19
- Lube rails on MK19
- The same weapons should be used with the same vehicle (makes bore sighting faster)
- Takes a good crew 20-30 minutes to mount weapons, bore sight and load for a mission
- Bore sight on a flat surface
- Continuously rehearse crew drills and loading procedures



## LESSONS LEARNED

- Soldier tendency to talk on external radio as if they were talking internally on CVC system
- Driver's should wear goggles when driving with hatch up
- Carefully follow start and shut down procedures (use check list approach)
- Lube weapons thoroughly
- Lash down all equipment; use seat belts



## LESSONS LEARNED

- Take particular care when loading the MK19 ammunition; don't crack view blocks
- Test firing weapons prior to mission is highly recommended (order TP for test fires)
- Not intended for QRF vehicle unless it is already prepped and ready
- .50 cal cellanoid tends to go out
- Order additional mounting pins and M10 charging handles





## LESSONS LEARNED

- Teams communicate more effectively with CVC system (commands given at a whisper)
- Team works more efficiently
- Maintenance, maintenance, maintenance



## VEHICLE EMPLOYMENT

- Employment considerations
  - Size (MOUT considerations)
  - Weapon capabilities (long/short range)
  - Increased range and lethality
  - Increased ballistic protection
  - Increased crew protection



## VEHICLE EMPLOYMENT

- Employment questions
  - Where should the ASV be placed during traveling, traveling over watch and bounding over watch?
  - How would you employ ASV during In-Transit Security? (front, middle, rear)
  - Consider ASV for escort, processing and security of EPWs
  - Consider ASV during MMSO operations, TCPs, Roadblocks, Defiles and Holding areas



## VEHICLE EMPLOYMENT

- Employment questions
  - Is the ASV too big for MOUT operations?
  - Discuss overall disadvantages with the vehicle
  - Any other situations where the ASV could be useful, i.e. crowd control



## CONCLUSION

- Overview of vehicle performance and capabilities
- Advantages over M1114
- Overall advantages of the ASV
- Overall disadvantages of the ASV
- Functional areas of the ASV
- Lessons learned
- Employment considerations and questions



# CONCLUSION

- QUESTIONS?